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ABSTRACT

The classroom interaction model is a strategy to help both teachers and students with reading comprehension. It focuses on literary or informational work rather than on specific skills abstracted from the work or skills proposed by reading texts or curriculum guides. The interaction model indicates that interpretation, application, and appreciation of meaning are products of literal understanding and that knowledge of writing structure and comprehension levels should precede formulation of questions, which are generated to elicit a range of thinking processes. The interaction is composed of three separate components discussing the effects of reading comprehension. (RB)

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INTERACTING FACTORS OF READING COMPREHENSION IN THE CLASSROOM

Richard Sinatra

Reading comprehension remains a continuous concern of researchers and classroom teachers. It is the ultimate goal of reading instruction, yet its definition eludes exact description. Models and theories of the factors underlying reading comprehension have been with us for a number of years (Singer and Ruddell, 1976). From a psycholinguistic perspective, we know that reading and comprehension can occur simultaneously (Samuels, 1976; Smith, 1971) and that reading can be a medium of thought. If word recognition or vocabulary control is scanty, thinking by means of reading will undoubtedly be affected. Once automatic decoding is achieved, the reader can attend to processing literal meaning while thinking of the more complex relationships implied or associated through wording, style, and structure. Thinking and reading may be regarded as independent functions; degrees of thinking ability may be associated with degrees of reading ability (Jastak and Jastak, 1965). The exactness of understanding achieved through reading lies somewhere between the reader's language facility with the graphophonic, syntactic, and semantic information embedded in the reading content (Wheat and Edmond, 1975), and his purpose and depth of involvement in pursuing meaning.

This paper and the interaction model which follows will help teachers identify a range of reading comprehension within specific modes of writing. Focus will be directed on the wholeness of a literary or informational work rather than on a few specific skills abstracted from the work or skills proposed by reading texts or curriculum guides. The interaction model indicates that interpretation,

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application, and appreciation of meaning are products of literal understanding and that knowledge of writing structure and comprehension levels should precede formulation of questions, generated to elicit a range of thinking processes. Since the interaction model is composed of three separate components affecting reading comprehension, each component will be reviewed beforehand.

Categories of Discourse

Teachers can categorize written expression. Written organization becomes increasingly more complex in grammar and rhetoric as style changes from the telling of a story about a subject to generalizing and theorizing about that subject. The levels of discourse one uses (and understands) shifts with stages of human development (Moffett, 1968). Shifts in comprehension and interpretation of printed matter occur when rhetorical distance between the reader and writer increases and when abstraction between the raw matter of a subject (as in the selection and ranking of elements of an experience) and the writer's symbolization of it increases. When a writer generalizes about what happens or engages in logical argumentation of what may happen, he becomes far removed from the first-hand experiences of the reader. The reader must relate to that level of experience recounted in a particular style and flavor of language. Changes in thinking process brought about by shifts in categories of discourse were suggested by Moffett (1968, p. 53):

> ...the various abstraction levels of discourse--recording, reporting, generalizing, and theorizing-- and the varieties of audience relationships, automatically program, if you will, a meaningful series of linguistic structures and rhetorical issues... I think that shifting, say, from narrative discourse to that of explicit generalization necessarily entails shifts in language and rhetoric and thus tends to bring successively to the fore different language structures and compositional issues. Tense, as I

> have indicated, is one thing that changes. But so do other things. Adverbial phrases and clauses of time, place, and manner that abound in recording and reporting give way, in generalization and theory, to phrases and clauses of qualification; temporal connectives, transitions, and organization perforce yield to logical ones....And generally, the increasing complexities of sentence structure, described as embeddings by transformational grammar, accompany the increasing cognitive ability to interrelate and subordinate classes and propositions.

If levels of abstraction increase through more complex discourse, it would seem advisable that teachers initially examine the structure of content that students would be asked to comprehend. A search for relationships within the content that make it accessible to basic understanding would occur. For example, the use of temporal or spatial order to describe phenomena may be well within the experiential level of students and pose no problem in abstractive thought. A review of the four traditional categories of discourse (Baer and Haug, 1970; McCart, 1968) will point out the underlying organizational structure inherent in each.

1. Description:

The descriptive writer creates a picture of an object, a person, a place, or an event. Within two types of descriptive writing, the writer subordinates details to a selected focus of spatial or subjective organization. If the writer's purpose is to describe the factual accuracy of a scene, he may arrange features within the scene in some proximity to each other. If the writer wished to relate how he felt about the scene or subject, as well, he would give impressions of how the scene appeared or what it meant to him.

2. Narration:

The writer of narration tells a story, weaves a yarn. He usually arranges events and details to follow in chronological or

sequential order of occurrence. Answering the question, "what happened", a well constructed narrative has a beginning, a middle, and an end, with an emphasis toward vividness and completeness of an action. Plot, therefore, is usually the guiding feature of organization.

3. Exposition:

The expository writer explains ideas and concepts in efforts to clarify specific information. Like the narrative, exposition moves forward in organization and like description, expository development adds specific details to a general topic, statement, or impression to give that central issue of focus more substance and clarity. However, while description gains literary stature with the use of connotative, sensory, and figurative language, expository writing is more literal and bound to a denotative dimension. In exposition, specific facts illustrations, steps, or reasons are made about a statement or a process so that which is being explained becomes clear. Therefore, exposition is usually the style of informational writing and content area subjects. Many authorities in the field of reading have regarded the organizational structure and paragraph patterns of exposition as important for thorough understanding in the various content area disciplines. When students understand the internal organization of expository content, they can select, organize, and recall information by classifying it into logical patterns.

4. Argumentation or Persuasion:

Persuasion emanates from opinion. The more convincing the argument, the more that opinion is apt to be well-informed and organized. Opinion can be regarded as an idea or belief that forms

based on the interpretation of fact. Persuasion is like exposition in development, but its purpose is different. Exposition attempts to explain, to be rational and objective so that the reader can gain an understanding of the topic. Persuasion attempts to sway, to present facts, reasons, and beliefs in such a way to convince the reader to believe or act a certain way about the topic. The persuasive writer may use emotionally charged language and repeat key ideas in different ways to emphasize the point he wants to make. He may cite information and authorities that agree with his views but refute the views of others who disagree with him. Therefore, while both exposition and persuasion draw from the same source, the difference in purpose marks the difference in style. The one tends to inform, to tell us the way it is, while the other tends to convince, to tell us the way it ought to be.

Levels of Understanding

Understanding of any category of discourse can occur at three levels of reading comprehension, at the literal, interpretive, or creative/applied levels (Herber, 1970; Huus, 1971). While almost all reading texts discuss levels of comprehension, there is not common agreement as to which skills should be incorporated in each level. Spache and Spache (1973) have suggested that separate skills identified by authors and test makers may just be labels for types of questions they ask rather than distinct, trainable reading behaviors, while Herber (1970) concluded that uniqueness in lists of skills lies with semantics; different authors use different wording for the same process. It may be more productive for teachers to understand the thinking processes generated at each level and then try to determine what reading-thinking skill is required by the reader for any type of question posed.

An important distinction to note is the language-thinking process

involved in determining the nature of reading comprehension. The first and foremost level indicates ingestion and dining of the author's bill of fare. Digestion and assimilation occur at successive levels. At the literal level, processing of the written text transpires, while at the interpretive and creative levels, thinking is generated through reading. Let's examine the reading-thinking processes required at each level:

1. The literal level, "what the author said":

At the literal level of comprehension, the student has successfully decoded the context and has gained knowledge of what the content has stated. The student can identify and/or locate specific details such as names, places, events, or dates, can sequence events or actions, can identify explicit relationships such as cause and effect or comparison and contrast, and can recognize emotions, traits or reactions of characters that are specifically noted. In addition to what, when, where, and who details, the reader must sequence and relate details to each other so that a wholeness of understanding occurs. Facts are observed, organized, and summarized to help form a central or main idea. Main ideas may be factually stated by an author in reference to a topic, and, at other times, may need to be inferred or interpreted from ideas in the passage. Objective main ideas occurring at the literal level, are usually content or subject-oriented, while subjective main ides tend to be associated in styles of narration or description and are interpretive in nature.

2. The interpretive level, "what the author meant":

At the interpretive level, the reader infers what was meant or intended by particular statements or wordings. The reader has understood the literal information in the passage and can combine these with his background and experiences about that topic. He derives meanings through reasoning, through calculated guesses and projections, and

through formation of conclusions based on specific ideas presented. Interpretive reasoning, however, remains bounded by the concepts and ideas presented in the content itself. Inductive and deuctive reasoning help the reader formulate decisions and predict outcomes implied by the text. Conclusions reached through such decision making should be verified and supported with specific evidence. Meaning deduced through interpretation can include skills of understanding sequence, time, place, theme, character development, mood or tone, style, and relationships of various types such as cause-effect, fact-fancy, agents-events, part-whole, conclusions and predictions (Huus, 1971).

Awareness of word meaning also influences interpretation. While word reading is necessary for the literal level, word understanding is a prerquisite for higher level understanding. Interpreting words and phrases in context involves morphologic, syntactic, and semantic knowledge. Words embody ideas and concepts as well. Students are aided to visualize meaning more accurately when teachers direct attention to the multiple meanings of words and literary language such as figures of speech and imagery.

3. The creative or applied levels of comprehension, "how to appreciate, value, or use what the author said and meant":

At the third level of reading comprehension assimilation and integration of information occurs. The reader may react to literal and implied meanings in two ways, largely dependent upon the syle of discourse. The reader may immediately sense a personal connection and accordingly formulate appreciations and value judgments about meaning, or the reader may wish to apply the knowledge in some type of meaningful exercise or project its use if the exercise were undertaken at a later time.

Comprehension and thinking at the creative level transcend the

actual message of the selection to involve the feelings, attitudes, and value judgments of the reader. Since likes and dislikes, tastes and interests, values and judgments are aroused about the topic, the creative level is personal to the background experience and standards held by the reader. In narration, description, and persuasion, subjectivity is an important consideration in appreciation of style, drama and intent of an author. Creative comprehension may well be a product of these styles of writing while in exposition, the reader's subjective attitude and appreciative skills are not oftentimes called into analysis. What is required is that the reader "apply" the knowledge stated or implied in some kind of useful way. The applied level takes the product of what the author said and meant and applies it in some pragmatic or theoretical activity (Herber, 1970). The relationship produced at the applied level has a scope larger than the meanings inherent in the reading selection itself. From the passage, the reader may be able to formulate a rule or principle or be able to apply meaning to solve a different problem. For instance, in a passage relating to food preservation, a student may discover a possible method to preserve insects that he wished to study at a later time.

Questioning

Through questioning, teachers assess the understanding of what was read. When posing questions in a given sequence, teachers express a strategy of thinking, and it is this sequence of questions that determines the quality or level of thought processed by the student (Hull, 1976; Tinsley, 1973). The taxonomic structure formulated by Bloom (1956) can be implemented by teachers to plan and measure question types according to one of the six sequential,

cumulative categories of thinking, from recall to evaluation. The interrogatives "who, what, where, when, why, and how" are the standard instructional tools used by teachers to guide students reading of textual materials (Herber and Nelson, 1975).

Spache and Spache (1973) have pointed out, however, that reading comprehension is affected by the pattern of questions a child learns to anticipate. Most sources agree that the majority of questions used to assess comprehension seem to be directed at the literal, recall level of understanding (Hansen and Lovitt, 1976). In Guszak's study of second, fourth and sixth grade reading groups, seventy per cent of all questions asked checked for literal understanding of content, while 13.7 per cent measured inferential thinking and 15.3 per cent evaluative thinking (1967). Guszak concluded that teachers needed further understanding of the reading-thinking-questioning hierarcy and that a model and methodology for developing reading-thinking skills would aid their understanding.

Questions can be categorized as those that are narrow or broad in scope (Amidon and Hunter, 1967; Cunningham, 1971). Questions that require low-level thinking, short factual answers, or other predictible responses are classified as narrow type questions. Narrow questions elicit predictible answers because they ask for specifics, allowing for only acceptable or correct answers. Narrow questions such as cognitive-memory or "yes" and "no" types, are used to collect information, to verify ideas and meanings, to review previously read materials, and to identify, group, and note relationships. Overuse of questions that can be answered with one-word responses do not promote higher level productive thinking about ideas gained through reading.

Convergent questions, also considered a narrow type, are broader than cognitive memory questions because they require putting the facts together to construct a correct answer. The reader must understand the facts, be able to associate or relate these facts in a meaningful whole, and be able to give an explanation of the content in his own words. The convergent response is often prompted by the "how" and "why" type question. The reader must respond with one answer that requires an explanation or statement of relationships found in previously read content.

Broad questions are generally of two types, divergent or evaluative. These questions develop a more productive mode of thinking since the answers must relate to prior experience of students while keeping to nuances of meaning implied by the text. Divergent questions ask the reader to organize thinking into patterns not explicitly identified in the reading passage. These type might require the reader to synthesize ideas and construct meaningful solutions. In responding to divergent questions, the reader is asked to infer, predict, or hypothesize. A response might have more than one answer since it's based on interpretation of content.

Evaluative questions cause the reader to organize meaning, to formulate opinions and to accept a point of view. They require the reader to use thinking operations of all previous levels. Using the information stated and implied, the reader judges, appreciates, values, defends, or applies meaning. Internalized knowledge and standards become the criteria of evaluation. Questions directed at higher levels of comprehension foster speculative thinking and a greater sense of relevancy about

the content. Especially at the creative/applied levels, the student is prompted to reflect, "What does this mean to me?"

The Classroom Interaction Model

The Classroom Interaction Model (see p. 15) is a plan, a strategy to help both teachers and students with reading comprehension. Teachers plan, use, and evaluate questions for assessing levels of comprehension through differing writing styles, while readers develop critical thinking abilities in the search, analysis, and evaluation of answers predictable from a text. The steps in using the Classroom Interaction Model for developing a range of reading-thinking processes would be these:

1. Selection of Content:

The teacher would select reading passages or larger works that are representative types of one of the four categories of discourse. The content area teacher may wish to focus greater effort on the various paragraph structures identified in expository writing. Herber (1970) has noted four organizational structures characteristic of expository writing across content area subjects: cause/effect, comparison/contrast, time order, and enumerative order. Robinson (1975), on the other hand, held a broader view of paragraph patterns in specific content areas and identified six patterns that appeared frequently in science, seven in social studies, and three in mathematics.

While "pure" examples of each category may require an active search through reading materials, it would help the teacher to focus on the organizing characteristics of each type of discourse. Each category has organizing features, consistent with the major elements

of literature, such as characterization, plot, setting, point of view, theme, diction, mood, rhythm, sound and stanza (University of the State of New York, 1970). The focus of narration is usually on the character's interaction with plot. In description, setting and mood establish the author's organization of space and impression. Relating accurate information through exposition compels an author to clarify ideas, concepts, or steps of a process. An idea, theme, or point of view held dearly by an author leads him to influence, persuade, or argue through writing in the persuasive/argumentative style. Furthermore, writers use transitional words and phrases according to the organization and relationship of writing style and to guide their sense of thought. Some transitional devices carry the direction of thought forward, others turn the thought momentarily backward, and others lead to conclusions or points of emphasis. Some devices arrange elements in spatial proximity to each other. Because of the purpose, style, and internal characteristics of each type of category, particular questions are more likely to be generated than others.

2. Question Planning:

The teacher plans and categorizes questions relevant to each of the three levels of comprehension. This aids the teacher in getting beyond the literal dimension into interpretive, creative, or applied meaning. The teacher will need to evaluate particular wording of questions since different wording tends to evoke different levels of thinking at each level of comprehension. For instance, open-ended, divergent type questions foster critical thinking about the topic. Low-level, narrow type questions foster convergent,

closed type thinking and may not fully focus on the scope of ideas presented in the topic. Students may also become conditioned to search for the right, acceptable answer in the eyes of the teacher. Productive thinking about authors' ideas is neglected in exchange for acceptance in being correct.

3. Specific Skill Identity:

Once a range of questions are planned based on specific types of content, the naming or labeling of specific skills can occur. Content analysis and levels of comprehension have preceded specific skill identification. This approach toward reading skills is not artificial to reading comprehension but a natural extension of reading/thinking involvement. The criteria for specific skill identity has become the reading/thinking process necessitated by the reader in answering a question about the content. It is the student's reading/thinking involvement that determines the naming of the reading skill. For instance, does the reading/thinking process require that the reader recall or look back to verify specific information or does it compel the reader to analyze and synthesize a number of items to conclude a particular answer.

4. An Illustrative Example and the Interaction Model:

Illustrative use of the interaction model follows with an excerpt of descriptive content (Steinbeck, 1970). Space does not permit a listing of all types of questions that could be asked. Furthermore, questions pertaining to sequence and character reaction are not relevant to this descriptive scene. For a thorough treatment of question categories and techniques of improving interaction with students, the teacher could consult a source such as

Sanders, Classroom Questions: What Kinds? (1966). Description of categories for the reading/thinking skills column came from a state inservice reading resource kit (University of the State of New York, 1974). The teacher would consult the model which follows and explore the procedure with other types of discourse. The content area teacher may wish to abstract just the expository band and use the strategy with different paragraph and organizational types within expository writing. Steinbeck's descriptive scene follows:

> About fifteen miles below Monterey, on the wild coast, the Torres family had their farm, a few sloping acres above a cliff that dropped to the brown reefs and to the hissing white waters of the ocean. Behind the farm the stone mountains stood up against the sky. The farm buildings huddled like little clinging aphids on the mountain skirts, crouched low to the ground as though the wind might blow them into the sea. The little shack, the rattling rotting barn were gray-bitten with sea salt, beaten by the damp wind until they had taken on the color of the granite hills.

Question	Level of Comprehension	Specific Reading/Thinking Skill
How would you title this selection?	Literal	Forming main idea
Where is the Torres farm located?	Literal	Locating specific details
How would you tell that this is not a wealthy farm?	Interpretive	Drawing conclusions
Can you compare the farm land of (your area) to that of the Torres farm?	Creative	Making imaginative comparisons
What made the shack and gray barn become gray-bitten?	Literal	Identifying relationships (direct cause stated)
Why did the author use the word "aphid" in the selection?	Interpretive	Semantic understanding of word in figure of speech
If the wind continued to blow, what might happen to the farm buildings?	Interpretive	Predicting the outcome
Can you describe what a view from the farm would look like?	Creative	Extending ideas of selection

INTERACTING FACTORS OF READING COMPREHENSION IN THE CLASSROOM

CATEGORIES OF DISCOURSE

CLASSIFYING OF QUESTIONS	Narrative - a story arranged in time order sequence with clear beginning, middle and end. Emphasis toward vividness and completness of action.	Description - a picture of a descriptive scene portrayed in either objective, spatial fashion or subjective, impressionistic flavor of what scene conveys in meaning.	Expository - Clarifying of factual information. Detailed facts or examples substantiating central ideas, passing on of information, and delineating steps in a process are styles of clarity.	Argumentative or Persuasive - influencing or persuading the reader to feel or believe a certain way about a topic. Facts, reasons, and authority are used to support adopted position.
Narrow - elicit specific answers from text. Convergent - put facts together to construct "right" answer. Must know facts, associate facts, see main ideas.				
Divergent - ideas organized into new patterns. Prompts synthesis of ideas to arrive at meaningful solutions; predicting, hypothesizing, inferring.				
Evaluative - requires judging, valuing, justifying, or defending position. Must organize prior knowledge, form opinion, and select stance.				

LEVELS OF COMPREHENSION

Literal - recognizing what is explicitly stated.

Interpretive - recognizing alternative ideas not explicitly stated; Inferring, concluding.

Creative - APPLIED valuing, judging, and showing original thinking in relating to what is stated or implied.

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